E/ECE/324
E/ECE/TRANS/505 } Rev.1/Add.86
30 March 1993

AGREEMENT

CONCERNING THE ADOPTION OF UNIFORM CONDITIONS OF APPROVAL AND RECIPROCAL RECOGNITION OF APPROVAL FOR MOTOR VEHICLE EQUIPMENT AND PARTS

done at Geneva on 20 March 1958

Addendum 86: Regulation No. 87

Date of entry into force as an annex to the Agreement: 1 November 1990

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF DAYTIME RUNNING LAMPS FOR POWER DRIVEN VEHICLES

UNITED NATIONS

Regulation No. 87

UNIFORM PROVISION CONCERNING THE APPROVAL OF DAYTIME RUNNING CAMPS FOR POWER DRIVEN VEHICLES

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Regulation No. 87

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF DAYTIME RUNNING LAMPS FOR POWER-DRIVEN VEHICLES

1. SCOPE

This Regulation applies to the approval of lamps intended to increase conspicuity of a vehicle in daylight.

2. DEFINITIONS

For the purpose of this regulation:

2.1 "Daytime running lamp" means a lamp facing in a forward direction used to make the vehicle more easily visible when driving during daytime;

2.2 "Axis of reference" (or "reference axis") means the characteristic axis of the light signal determined by the manufacturer of the lamp for use as the direction of reference (H = 0°, V = 0°) for angles of field for photometric measurements and for the installation of the lamp on the vehicle;

2.3 "Centre of reference" means the intersection of the axis of reference with the illuminating surface. It is indicated by the manufacturer of the lamp;

2.4 "Illuminating surface" means the orthogonal projection of the lamp on a plane perpendicular to its axis of reference and in contact with the exterior light-emitting surface of the lamp, this projection being bounded by the edges of screens situated in this plane, each allowing only 98% of the total luminous intensity of the light to persist in the direction of the axis of reference. To determine the lower, upper and lateral limits of the illuminating surface, only screens having a vertical or a horizontal edge shall be considered;

2.5 Daytime running lamps of different "types" are daytime running lamps which differ in such essential respects as:

2.5.1 the trade name or mark,

2.5.2 the characteristics of the optical system,

2.5.3 the category of filament lamp.

3. APPLICATION FOR APPROVAL

3.1 The application for approval shall be submitted by the holder of the trade name or mark or by his duly accredited representative.

3.2 For each type of daytime running lamp, the application shall be accompanied by:

3.2.1 drawings (three copies) in sufficient detail to permit identification of the type of the daytime running lamp and showing geometrically the position in which the daytime running lamp is to be fitted to the vehicles, the axis of observation to be taken as the axis of reference in the tests (horizontal angle H = 0°, vertical angle V = 0°): and the point to be taken as the centre of reference in the said tests: and the illuminating surface,

3.2.2 a brief technical description stating, in particular, with the exception of lamps with non-replaceable light sources, the category(ies) of filament lamp(s) which is to be used; this filament lamp category shall be one of those contained in Regulation No. 37,

3.2.3 two lamps.

3.3 The competent authority shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted.

4. MARKINGS

Daytime running lamps submitted for approval shall,

4.1 bear on the lens the trade name or mark of the applicant, this marking must be clearly legible and be indelible,

4.2 bear a clearly legible and indelible marking showing the category(ies) of the filament lamp(s) which is (are) to be used; this is not valid for lamps with non-replaceable light sources,

4.3 in the case of a daytime running lamp with non-replaceable light sources bear the marking of rated voltage and rated wattage,

4.4 provide adequate space for the approval mark and for the additional symbols prescribed in paragraph 5.2 below, the said space shall be shown in the drawings referred to in paragraph 3.2.1 above.

5. APPROVAL

5.1 General

5.1.1 If the two lamps which are submitted in pursuance of paragraph 3.2.3 above satisfy the requirements of this Regulation, approval shall be granted.

5.1.2 Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations

annexed to the 1958 Agreement, a single international approval mark may be applied provided that such lamps are not grouped, combined or reciprocally incorporated with a lamp or lamps not satisfying any one of these Regulations.

5.1.3 An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign this number to another type of lamp covered by this Regulation.

5.1.4 Notice of approval or of extension or refusal or withdrawal of approval or production definitely discontinued of a type of lamp pursuant to this Regulation shall be communicated to the Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in annex 1 to this Regulation.

5.1.5 Every lamp conforming to a type approved under this Regulation shall bear, in the space referred to in paragraph 4.4 above, an approval mark as described in paragraphs 5.2 and 5.3 below.

5.1.6 The mark and symbols mentioned in paragraph 5.2 shall be indelible and clearly legible even when the lamp is mounted on the vehicle.

5.2 Composition of the approval mark

The approval mark shall consist of:

5.2.1 an international approval marking, comprising:

5.2.1.1 a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, 1/

5.2.1.2 an approval number,

1/ One for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech and Slovak Federal Republic, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation and 23 for Greece. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

5.2.2 the additional symbol "RL".

5.2.3 The two digits of the approval number which indicate the series of amendments in force at the time of issue of the approval, may be marked close to the above additional symbols.

5.3 Arrangement of the approval mark

5.3.1 Independent lamps

Annex 2, figure 1, to this Regulation gives an example of arrangement of the approval mark with the above-mentioned additional symbols.

5.3.2 Grouped, combined or reciprocally incorporated lamps

5.3.2.1 Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be affixed, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps, provided that:

5.3.2.1.1 it is visible after their installation.

5.3.2.1.2 no part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.

5.3.2.2 The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and, if necessary, the required arrow shall be marked:

5.3.2.2.1 either on the appropriate illuminating surface,

5.3.2.2.2 or in a group, in such a way that each of the grouped, combined or reciprocally incorporated lamps may be clearly identified.

5.3.2.3 The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by the Regulation under which approval has been granted.

5.3.2.4 An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.

5.3.2.5 Annex 2, figure 2, to this Regulation gives examples of arrangements of approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols.

5.3.3 Lamps reciprocally incorporated with other lamps, of which the lens may also be used for other types of devices

The provisions laid down in paragraph 5.3.2 above are applicable.

5.3.3.1 In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body of the device, even if it cannot be separated from the lens, also comprises the space described in paragraph 4.4 above and bears the approval marks of the actual functions.

If different types of devices comprise the same main body, the latter may bear the different approval marks.

5.3.3.2 Annex 2, figure 3, to this Regulation gives examples of arrangements of approval marks relating to the above case.

6. GENERAL SPECIFICATIONS

6.1 Each lamp shall conform to the specifications set forth in the paragraphs below.

6.2 Daytime running lamps shall be so designed and constructed that in normal use, despite the vibration to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Regulation.

7. INTENSITY OF LIGHT

7.1 The intensity of the light emitted by each lamp shall be not less than 400 cd in the axis of reference.

7.2 Outside the reference axis, in each direction corresponding to the points in the light distribution table reproduced in annex 3 to this Regulation, the intensity of the light emitted by each lamp shall be not less than the product of the minimum specified in paragraph 7.1 above by the percentage specified in the said table for the direction in question.

7.3 The intensity of the light emitted shall be not more than 800 cd in any direction.

7.4 In the case of a lamp containing more than one light source the lamp shall comply with the minimum intensity required when any one light source has failed and when all light sources are illuminated the maximum intensity shall not be exceeded.

8. ILLUMINATING SURFACE

The area of the illuminating surface shall be not less than 40 cm^2.

9. COLOUR OF LIGHT

The colour of the light shall be white. It shall be measured by using a source of light at a colour temperature of 2856° K (corresponding to illuminant A of the International Commission on Illumination, CIE). The colour must be within the limits of the trichromatic co-ordinates prescribed in annex 4 to this Regulation.

10. TEST PROCEDURE

All measurements shall be carried out with a colourless standard filament lamp of the category indicated for the daytime running lamp adjusted to produce the reference luminous flux specified for this category of filament lamp. All measurements on lamps with non-replaceable light sources shall be made at test voltage 13.5 V or 28 V respectively.

11. HEAT RESISTANCE TEST

11.1 The lamp must be subjected to a one-hour test of continuous operation following a warm-up period of 20 minutes. The ambient temperature shall be 23° C ± 5°. The filament lamp used shall be a filament lamp of the category specified for the lamp, and shall be supplied with a current at a voltage such that it gives the specified average power at the corresponding test voltage.

11.2 Where only the maximum power is specified, the test shall be carried out by regulating the voltage to obtain a power equal to 90% of the specified power. The specified average or maximum power referred to above shall in all cases be chosen from the voltage range of 6, 12 or 24 V at which it reaches the highest value.

11.3 After the lamp has been stabilized at the ambient temperature, no distortion, deformation, cracking or colour modification shall be perceptible. In case of doubt the intensity of light according to paragraph 7 above shall be measured. At that measurement the values shall reach at least 90% of the values obtained before the heat resistance test on the same device.

12. MODIFICATIONS OF A TYPE OF DAYTIME RUNNING LAMP AND EXTENSION OF APPROVAL

12.1 Every modification of the type of lamp shall be notified to the administrative department which approved the type of lamp. The department may then either:

12.1.1 Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the lamp still complies with the requirements; or

12.1.2 Require a further test report from the technical service responsible for conducting the tests.

12.2 Confirmation or refusal of approval, specifying the alterations shall be communicated by the procedure specified in paragraph 5.1.4 above to the Parties to the Agreement applying this Regulation.

12.3 The competent authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Parties to the Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

13. CONFORMITY OF PRODUCTION

Every daytime running lamp bearing an approval mark as prescribed under this Regulation shall conform to the type approved and meet the requirements of this Regulation. Nevertheless, in the case of a daytime running lamp selected at random from series production, the requirements as to minimum and maximum intensity of the light emitted (measured with a standard lamp as referred to in para. 10 above) shall be at least 80% of the minimum values and not exceed 120% of the maximum value specified.

14. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

14.1 The approval granted in respect of a type of daytime running lamp pursuant to this Regulation may be withdrawn if the requirements are not complied with or if a daytime running lamp bearing the approval mark does not conform to the type approved.

14.2 If a Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

15. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture a type of daytime running lamp approved in accordance with this Regulation, he shall so inform the authority which granted the approval. Upon receiving the relevant communication, that authority shall inform thereof the other Parties to the Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

16. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS

The Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, or production definitely discontinued, issued in other countries, are to be sent.

Annex 1

COMMUNICATION

(maximum format: A4 (210 x 297 mm))

issued by: Name of administration:

.....

.....

.....

concerning: 2/ APPROVAL GRANTED

APPROVAL EXTENDED

APPROVAL REFUSED

APPROVAL WITHDRAWN

PRODUCTION DEFINITIVELY DISCONTINUED

of a type of daytime running lamp

pursuant to Regulation No. 87

Approval No. ..... Extension No. .....

1. Trade name or mark of the device: .....

2. Manufacturer's name for the type of device: .....

.....

3. Manufacturer's name and address: .....

.....

4. If applicable, name and address of the manufacturer's representative: ...

.....

5. Submitted for approval on: .....

6. Technical service responsible for conducting approval tests: .....

.....

7. Date of test report issued by that service: .....

8. Number of test report issued by that service: .....

9. Concise description: .....

Number and category of filament lamps: 3/ .....

10. Position of the approval mark: .....

11. Reason(s) for extension (if applicable): .....

.....

12. Approval granted/refused, extended/withdrawn: 2/ .....

.....

13. Place: .....

.....

14. Date: .....

15. Signature: .....

16. The following documents, bearing the approval number shown above, are available on request:

.....

Notes

1/ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

2/ Strike out what does not apply.

3/ For daytime running lamps with non-replaceable light sources indicate the number and total wattage of the light sources used.

Annex 2

EXAMPLE OF ARRANGEMENT OF THE APPROVAL MARK

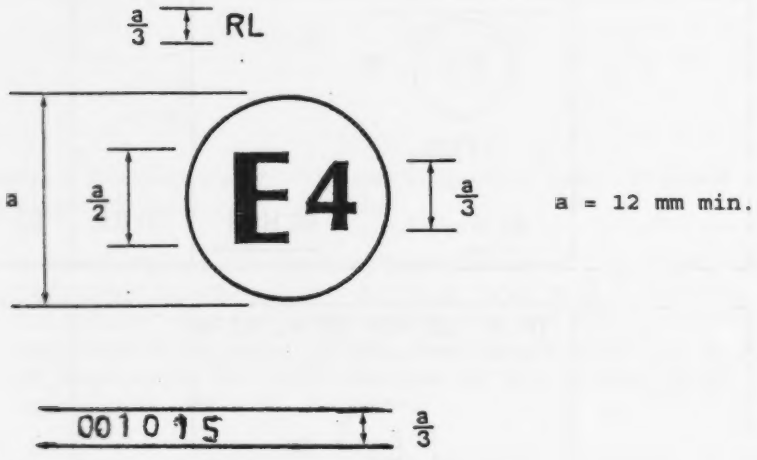


Figure 1

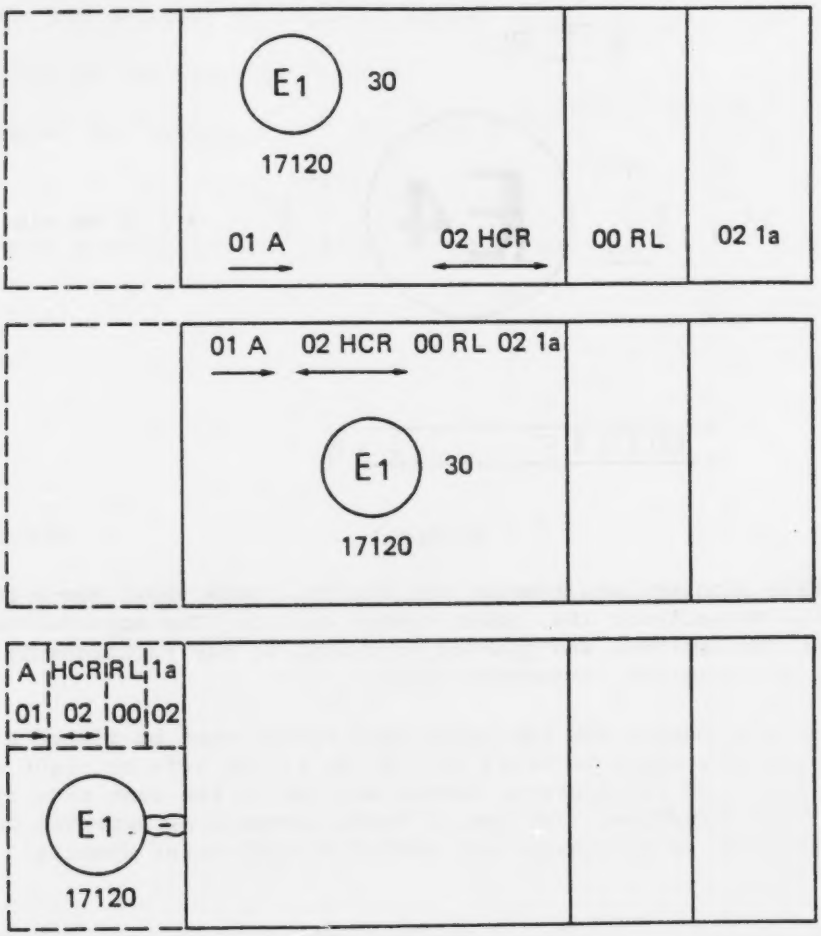
The daytime running lamp bearing the approval mark shown above has been approved in the Netherlands (E4) under number 001015. The approval number indicates that the approval was granted according to the requirements of this Regulation in its original (unamended) form.

Note: The approval number and the additional symbol must be placed close to the circle and either above or below the "E" or to the left or right of that letter. The digits of the approval number must be on the same side of the "E" and face the same direction. The use of roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols.

Examples of possible markings for grouped lamps
situated at the front of the vehicle

Figure 2

The vertical and horizontal lines schematize the shape of the lighting device. These are not part of the approval mark.

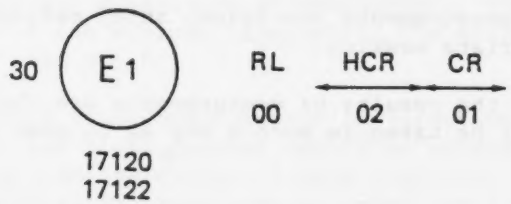


Note: The three examples shown above correspond to a lighting device bearing an approval mark relating to:

A front position lamp approved in accordance with the 01 series of amendments to Regulation No. 7;
A headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam with a maximum intensity comprised between 86,250 and 101,250 candelas, approved in accordance with the 02 series of amendments to Regulation No. 8;
A daytime running lamp approved in accordance with Regulation No. ... in its original form;
A front direction indicator lamp of category 1a approved in accordance with the 02 series of amendments to Regulation No. 6.

Lamp reciprocally incorporated with a headlamp

Figure 3



The above example corresponds to the marking of a lens intended to be used in different types of headlamps, namely:

either: a headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam with a maximum intensity comprised between 86,250 and 101,250 candelas, approved in Germany (E1) in accordance with the requirements of Regulation No. 8 as amended by the 02 series of amendments,

which is reciprocally incorporated with

a daytime running lamp approved in accordance with Regulation No. ... in its original form;

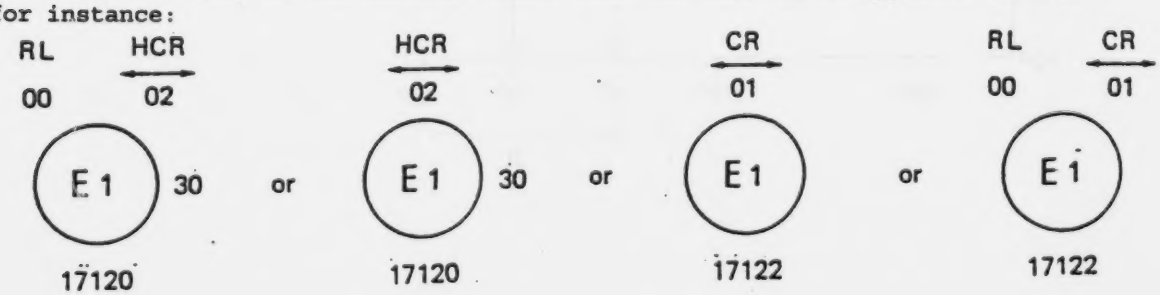
or: a headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam, approved in Germany (E1) in accordance with the requirements of Regulation No. 1 as amended by the 01 series of amendments,

which is reciprocally incorporated with

the same daytime running lamp as above;

or even: either of the above-mentioned headlamps approved as a single lamp.

The main body of the headlamp shall bear the only valid approval number, for instance:



Annex 3

PHOTOMETRIC MEASUREMENTS

1. When photometric measurements are taken, stray reflections shall be avoided by appropriate masking.

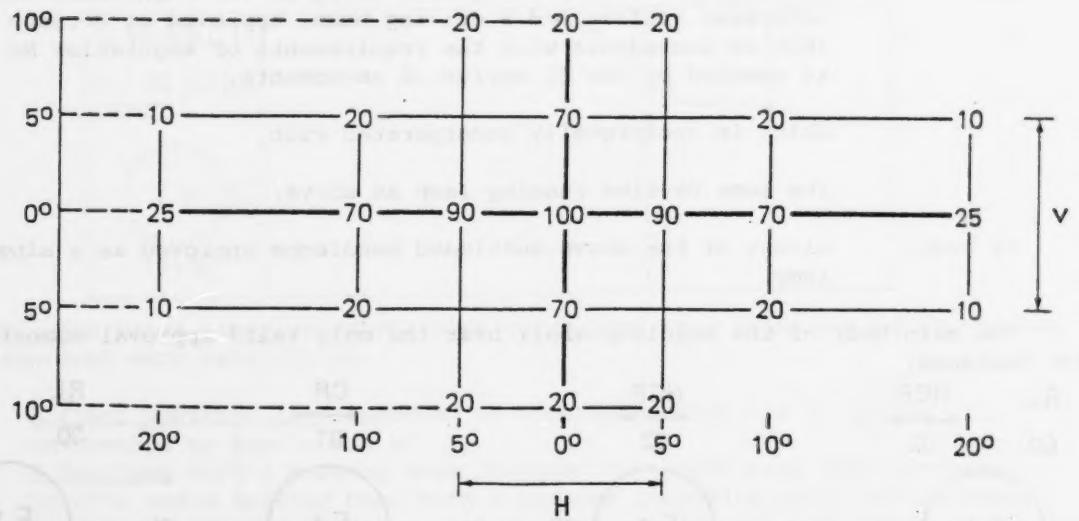
2. In the event that the results of measurements are challenged, measurements shall be taken in such a way as to meet the following requirements:

2.1 the distance of measurement shall be such that the law of the inverse of the square of the distance is applicable:

2.2 the measuring equipment shall be such that the angle subtended by the receiver from the reference centre of the light is between 10′ and 1°:

2.3 the intensity requirement for a particular direction of observation shall be satisfied if the required intensity is obtained in a direction deviating by not more than one-quarter of a degree from the direction of observation.

3. Table of standard light distribution



3.1 The direction H = 0° and V = 0° corresponds to the reference axis. (On the vehicle, it is horizontal, parallel to the median longitudinal plane of the vehicle and oriented in the required direction of visibility). It passes through the centre of reference. The values shown in the table give, for the various directions of measurement, the minimum intensities as a percentage of the minimum required in the axis for each lamp (in the direction H = 0° and V = 0°).

3.2 Within the field of light distribution of paragraph 3 above schematically shown as a grid, the light pattern should be substantially uniform, i.e. in so far as the light intensity in each direction of a part of the field formed by the grid lines shall meet at least the lowest minimum value being shown on the grid lines surrounding the questioned direction as a percentage.

Annex 4

COLOUR OF LIGHT

TRICHROMATIC COORDINATES

WHITE

Limit towards blue	$X \geq 0.310$
Limit towards yellow	$X \leq 0.500$
Limit towards green	$(Y \leq 0.150 + 0.640\ X$
	$(Y \leq 0.440$
Limit towards purple	$Y \geq 0.050 + 0.750\ X$
Limit towards red	$Y \geq 0.382$

CORNER POINTS	X	Y
	0.310	0.348
	0.310	0.283
	0.443	0.382
	0.500	0.382
	0.500	0.440
	0.453	0.440

- - - - -